

REMARKS

Reconsideration of the outstanding Office Action is respectfully solicited.

Applicants respectfully traverse the objection of paragraphs numbered 2-4 in the outstanding Office Action. However, it is believed that the objections are moot in view of revision of paragraphs of pages 6 and 7 to refer to "trehalose" and to the trademark Aerosol-OT®.

Applicants respectfully traverse the rejections under 35 U.S.C. §§101, 112. Claims 1-5 have been canceled. New Claims 6 et seq. are believed to present modification of claim language to address the Examiner's concerns. Claim 1 has been canceled and composition, combination and method claims are presented. In view of the Examiner's express comments the claims now recite polysaccharide or disaccharide. Applicants respectfully traverse the rejections in paragraphs 8 and 9 of the Office Action although the issues are believed to be moot in view of the claims presented herein.

Applicants respectfully traverse the rejection of Claims under 35 U.S.C. 102. In applicants' view the rejection for lack of novelty does not comply with MPEP policy. In Section 2131 of the MPEP, which presents a synopsis of case precedent concerning the disclosure requirements of an anticipatory reference, the MPEP indicates that such a reference must describe each and every element of the claim under scrutiny. In this official action the examiner objected to present claims 3 to 5 due to lack of novelty in view of cited prior art document US 3,427,382 (Haefele). Haefele discloses a gel hairdressing composition composed of a plurality of substances. However, applicant could not identify the composition of the present coupling medium according to claim 3, comprising a homogenized mixture of at least a polysaccharide, a surface-active substance and water. Therefore the coupling medium according to present claims 3 to 5 is novel in view of this cited prior art document.

The claimed combination of materials is essential in achieving the properties necessary for the coupling of transverse ultrasonic waves into a test piece. The claimed

composition enables the forming of a three-dimensionally linked molecular structure which immobilizes the water sufficiently molecularly in the microspaces (see page 6, 4th paragraph of the present description). Due to this three-dimensionally linked molecular structure the transmission of shear forces necessary for the coupling properties for transverse ultrasonic waves is achieved. A common gel like the hairdressing gel disclosed in Haefele does not have such properties. Such a gel could couple longitudinal waves (due to its high content of water) but not transversal waves. Please see Claims 7 and 11.

On page 7 in the middle of the office action the examiner asserts that the instant application does not show any difference between the transmission of transverse waves and longitudinal waves in the coupling medium and that the skilled artisan would have reasonably expected the medium to transmit either wave energy if it is taught as a coupling medium. This is definitely wrong. In applicant's opinion, the physical principle for the transmission of longitudinal ultrasonic waves is completely different from the physical principle for the transmission of transverse ultrasonic waves (which is evident for every student of physical science and even more for the skilled person dealing with the coupling of ultrasonic waves). In particular any medium for transverse ultrasonic waves must possess sufficient shear stability to be able to transmit these waves. Coupling agents which are suitable for longitudinal ultrasonic waves include too much water so that they are not suitable for coupling transverse ultrasonic waves. This correlation is known to skilled persons in the field of ultrasonic wave propagation. It is also explained in the 3rd paragraph of page 1 of the present patent application.

Therefore, although a lot of substances carrying sufficient water are suitable for coupling longitudinal ultrasonic waves, the possible substances for coupling transverse ultrasonic waves are very seldom, since they have to provide sufficient shear strength to this end.

This shear strength is achieved with the combination of materials of the present invention, forming a three-dimensionally linked molecular structure which immobilizes the water molecularly in the microspaces.

In applicant's view, a correct understanding of the basic physical back grounds of the coupling of transverse ultrasonic waves reveals the lack of relevance of the applied prior art documents of Buchhalter (US 4,002,221) and Larson et al. (US 6,039,694). Both documents deal with the coupling of longitudinal ultrasound waves commonly used in medical applications.

Buchhalter discloses gelled coupling agents for ultrasonic pulses containing hydroethylcellulose as a polysaccharide. This substance is known as a thickening agent but is not sufficient without the further components disclosed in present claims 3 to 5 to function as a coupling medium for transverse ultrasonic waves. Larson refers to Buchhalter and only lists (column 2, lines 40 ff.) single compounds which can be part of a water based gel. This enumeration, however, does not mean that all possible combinations or the listed substances can be used a coupling agent. Therefore, this document does not propose a homogenized mixture of a polysaccharide, a surface-active substance and water in a creamy consistency.

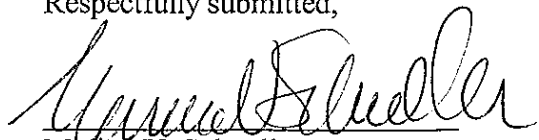
Furthermore, due to the different physical principles of propagation the skilled person would not search for a solution for the coupling of transversal ultrasonic waves in the field of coupling mediums for longitudinal ultrasonic waves as is the case in the two cited references. Therefore the claimed coupling medium cannot be obvious for the skilled person in view of the cited prior art documents.

Reconsideration and an early allowance are respectfully solicited.

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